01v

DIGITAL MIXING CONSOLE

YAMAHA

When it's time to go digital, it's time to go Yamaha. Let the 01V take you there in style.

If you're ready for your first digital mixer, or if you could use a rack-mountable, full-featured programmable digital mixer with 24 inputs to tidy up an elaborate music system that's not as flexible as you'd like, then you're ready for the Yamaha 01V Digital Mixing Console.

The awesome offspring of the 01, 02R and 03D line — the world's most popular family of digital mixers — the 01V is an enormously powerful digital mixer in its own right, featuring a wealth of professional-level signal routing, processing and mixing options, as well as crystal clean sound with 105dB dynamic range — and even the capability to easily link another 01V for 48 input channels — all at an enticing entry-level price.

The 01V is the ideal digital mixer for project studios, broadcast, private studios, live sound applications, and more. Simply the most flexible digital mixer available for the money, the 01V will let you take your music wherever you want to go — and deliver it in style.

Main features

- 24 input channels, including 16 built-in analog inputs (with +48V phantom powering on 12 channels), plus 8 optional digital inputs (ADAT, TASCAM, AES/EBU formats available)
- 4 freely assignable analog outputs, plus expansion options for 4 additional analog outputs, or 8 assignable digital outputs
- Digital I/O expansion slot for optional multitrack recorder interface card (ADAT, TASCAM, AES/EBU format options), plus 8 channels analog input card options
- Coaxial-type digital stereo input and output, and balanced XLR-type stereo outputs
- Total 120 bands of EQ — all processed with 44-bit precision — including 4-band parametric equalization on all main input and output mixing channels, and 2-band EQ on secondary input channels, plus an EQ library with 40 preset programs and 40 user programs
- Centrally located, dedicated panel controls for the four bands of EQ — just like the 02R — and a dedicated pan control
- 2 internal stereo multi-effects processors with the same DSP as the Yamaha ProR3 and REV500, and an effects library with 42 preset programs and 57 user programs
- Input delays of up to 250ms and output delays of up to 300ms
- 22 dynamics processors permitting individual dynamics processing, and a dynamics library with 40 preset programs and 40 user programs
- 99 scene memories for instant recall of mixer settings at the touch of a button, or recall via MIDI program change messages
- Channel data copy and swapping, flexible effect routing, dedicated controls for EQ and pan, and a dedicated effect return signal control section
- Comprehensive MIDI implementation which permits automated mixing via program change, control change and system exclusive messages received from an external sequencer, plus MMC capability and user definable remote control options
- TO HOST port which permits direct connection to a personal computer, as well as to another 01V for double the mixing power — the 01V Link function lets you easily create a 48-input digital mixing system for an unprecedented low price

Front Panel

Rear Panel

This photograph shows a model with optional MY8-TD (TASCAM) card.

Fast Internal Processing And Superior Sonic Specs

Fast and reliable internal digital audio processing, as well as LCD refreshing and fader control, is guaranteed by Yamaha's custom 32-bit DSP chips.

Uncompromising sonic quality and performance are guaranteed by 20-bit, 128-times oversampling ADs on each input and 20-bit, 8-times oversampling DAs on the stereo outputs, and 44-bit EQ processing.

The 01V's audio dynamic range is an impressive 105dB for analog input to analog stereo output.

Optional Expansion Cards With Maximum Compatibility

The 01V's mini YGDAI (Yamaha General Digital Audio Interface) slot located on the rear panel provides a convenient means for expanding your mixing power in a variety of ways.

There are cards available separately which provide an additional 8 digital inputs and 8 assignable digital outputs for direct digital connection to major modular digital multitrack recorders such as Alesis ADAT, Tascam DA98/DA88/DA38, and AES/EBU format systems. The digital outputs can be configured as bus outs, aux sends, direct outs, or stereo outs at will.

There is also a card available separately which provides 4 additional analog outputs. So although the 01V is essentially a 4 bus mixer, it can easily be expanded to achieve eight-track simultaneous digital recording.

Options		Model	Connector
I/O Interface Card	TASCAM	MY8-TD	D-sub 25pin x 1
	ADAT	MY8-AT	OPTICAL x 2
	AES/EBU	MY8-AE	D-sub 25pin x 1
DA Interface	D/A	MY4-DA	XLR x 4
AD Interface	A/D	MY8-AD	TRS Phone x 8
RACK MOUNT KIT		RK124	

MY8-TD

MY8-AT

MY8-AE

MY4-DA

MY8-AD

Streamlined Panel Design Makes Operation Easy And Intuitive

If you've never operated a Yamaha digital mixer before, you'll be pleasantly surprised to discover how convenient and natural the overall "feel" of the 01V is, as well as how quickly you'll be able to master the operation of it. The 01V's panel layout makes access to all features and adjustment of parameter values as quick and easy as the press of one of the many dedicated buttons and spin of the detented data dial.

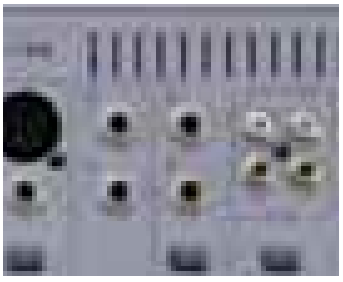
The large 320 x 80 dot LCD provides plenty of visual feedback of mixer status, and an LED on each panel button lights to indicate which parameter is currently selected. Pressing the HOME button once or more lets you call up one of a number of screens which provide instant views of overall mixer status, while VIEW screens give you at-a-glance confirmation of the various channel settings.

Channel and Stereo Master control is especially easy. Dedicated ON buttons let you select only what you want to hear. Pressing a SEL (Select) button displays channel or Master status in the LCD, and each channel has a dedicated SOLO button for singling out a specific track for aural scrutiny.

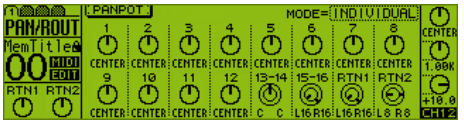
Access to channel pan position, as well as EQ settings, effect send levels and dynamics setting is also quick and convenient, thanks to dedicated buttons which you can press to display the respective settings in the LCD.

Particularly handy is the centrally located panel parametric EQ control section which gives you instant access to each of the four bands of equalization, plus frequency and gain adjustment — just like the 02R.

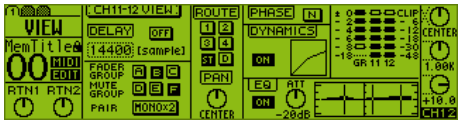
Also, the Return control section lets you adjust each effect return level with the twist of a knob, as well as solo or turn each on and off at will.

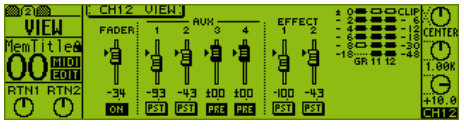


Add to all this 99 scene memories in which to store "snapshots" of all parameter settings for instant recall — complete with scene naming — as well as convenient channel data copy and swap functions, and you can see how the 01V will literally save you hours and hours of setup time before and during sessions, so you can spend your quality time concentrating on creativity and making a marvelous mix.

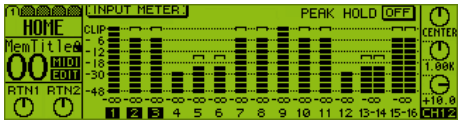


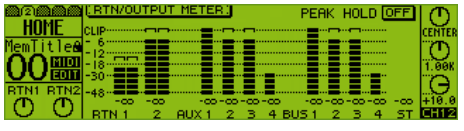
The PAN screen lets you see stereo pan positions of all channels at once.

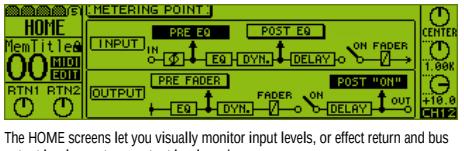




The VIEW screens give you at-a-glance confirmation of all selected channel parameter settings, including fader positions for channel level, aux send and effect send levels and pre/post fader configurations, and more.







The HOME screens let you visually monitor input levels, or effect return and bus output levels, or stereo output levels and more.

Flexible Input/Output Configuration And Signal Routing

The 01V's flexible configuration of inputs and outputs and signal routing capabilities makes it suitable for an extremely wide range of recording, main mixing, submixing and even live mixing applications.

Included are 12 analog input channels and 2 analog stereo inputs — making a total of 16 analog inputs — plus 4 "Omni" outputs which are freely assignable, along with a main stereo mix bus and stereo monitor outputs.

All analog inputs are equipped with latest generation 20-bit AD and DA converters, which let the 01V achieve over 105dB dynamic range from analog input to output.

There are also stereo 2-track inputs and outputs for direct connection to an analog 2-track recorder for master mixes, and even coaxial-type digital stereo input and output for direct connection to a digital 2-track recorder such as DAT or MD.

Add to all this the option to install an expansion card with an additional 8 digital inputs and 8 digital outputs (via a rear panel mini YGDAI slot), and you can see how the 01V is designed to hold its own in practically any recording and mixing situation. In fact, in its full capacity, the 01V has nothing less than 24 inputs and 12 assignable outputs that can be interfaced to outboard equipment.

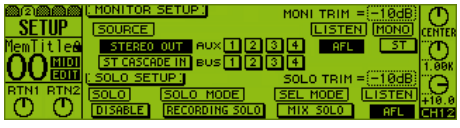
Analog channel inputs provide the means to satisfy even the most demanding mixing engineer. Input channels 1-12 have mic preamps, XLR and balanced stereo 1/4" phone connectors, and +48 volt phantom power which can be applied to the XLR inputs. These channels can accept input levels from -60dB to +10dB, and feature a PAD switch which can provide 26dB level attenuation.

Inputs 13-16 feature balanced stereo 1/4" connectors and support line level signals between -20 and +10dB. All 16 channels feature a continuously variable GAIN control to permit accurate microphone or line level matching with the widest possible range of input sources.

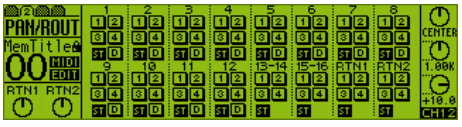
Individual Channel PEQ, And Dynamics Processors With Libraries And Storage

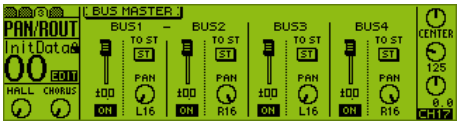
The 4 Omni outputs are balanced stereo 1/4" type connectors, and can be freely configured to output aux, bus, channel direct, and stereo signals. The Omni outputs can also be paired together for stereo operation and can be routed to the control room monitors for cue mixes, with onboard effects returns included.

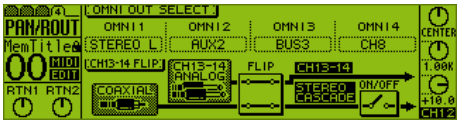
The coaxial stereo digital I/O 24-bit connectors permit direct connection to DAT recorders and other compatible digital devices. The stereo digital input signals can be routed to the stereo bus for submixing, or to a stereo input channel for processing and mixing. The number of inputs can be increased by digitally cascading two 01Vs together using the TO HOST port, with SOLO functions linked stereo 24-bit SUB-IN.



The Monitor Setup screen lets you quickly configure the 01V to suit your monitoring needs.







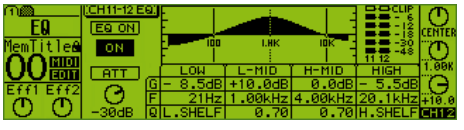
With the 01V, routing signals to any of the four Omni outputs is quick and easy, as is setting Bus Master levels and Omni Out Select configuration.

The 01V's parametric equalizers and onboard dynamics processors provide the same tried and true, professional quality signal processing as the 02R, since they use the same Yamaha custom 32-bit DSP, and feature the same parameters selected after close consultation with the world's top professional recording engineers.

Comprehensive libraries of preset EQ and dynamics settings provide a great place to start or for reference, and plenty of user programs are available to store your own.

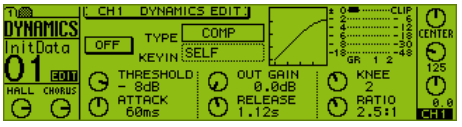
There are 26 four-band parametric EQs which are available for all 16 individual channel inputs, the 2 onboard stereo effects returns, the 4 aux sends, and main stereo outputs. (A 2-band PEQ is available for optional digital input channels 17-24.)

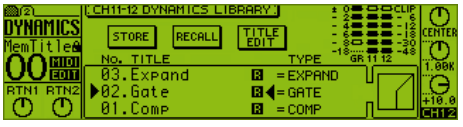
Each of the four EQ bands has a range from 20 Hz to 20kHz which can be adjusted in 1/12 octave steps, and a 0.1 - 10 Q range. High and low EQ bands can be configured as shelving or peaking, with the high band capable of being configured as LPF, and the low band as HPF. EQ gain settings range from -18 to +18dB. EQ settings can also be copied between channels via the equalizer library.



The panel EQ section gives you direct access to frequency and gain control of each band of the PEQ for the selected channel, and channel panning too.

The EQ library's collection of 40 preset EQ programs include specific settings which can be applied to everything from acoustic and electronic instruments to percussion to vocals. Including the 40 memories for storing your own EQ settings, a total of 80 EQ programs are available for instant recall.





There are 40 preset programs in the Dynamics Library which you can freely edit to suit your needs and then store in 40 user programs for instant recall at any time.

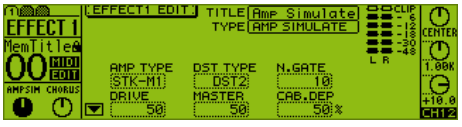
There are 22 onboard dynamics processors for 16 individual channels, 4 aux sends, and main stereo outs which provide a choice of compressor, expander, gate, ducker and compander functions to apply to individual channel as well as stereo inputs. Any input channel (1-16 or stereo input) can be used as a key trigger.

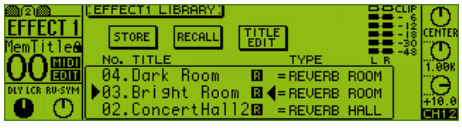
The dynamics library's collection of 40 preset dynamics programs include settings appropriate for the mixing of strings, brass sections, sampled percussion, vocals and much more, and 40 user dynamics programs are available for storing your own settings for instant recall.

2 Internal Effects Processors With Libraries, Storage And Auxiliary Routing

Two of the 01V's 6 aux sends are "hot-wired" directly to the onboard 32-bit effects processors which utilize the same DSP and some of the same algorithms as Yamaha's professional ProR3 and REV500 models.

There are 42 basic preset effects which make up a library of various reverb, delay, echo, chorus, flange, pitch shifting and other effect types to choose from, as well as freeze (sampling) and guitar amp simulation effects. Each effect type has a host of parameters which can be freely edited and then stored in any of the 57 user programs — to make a total of 99 effects on hand.

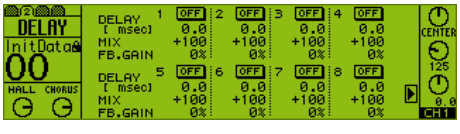




The 2 onboard professional effects processors include 42 preset programs in the Effects Library which you can freely edit and then store in 57 user programs.

Besides the 2 onboard effects, the 4 Omni outputs can be used as additional auxiliary sends. Thus, the 01V has powerful submixing applications with as many as 6 effects available for signal processing.

The 01V also features channel input delays of up to 250ms which are useful for microphone-placement compensation for live recording and video editing. Channel delays can also be mixed with the dry signal to provide delay and echo effects. Output delays of up to 300ms for the stereo and 4 Omni outs are useful for applications which require delay-compensation on the outputs.



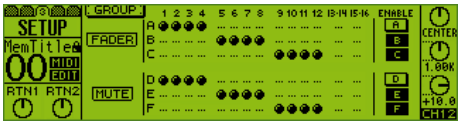
60mm Motorized Faders With Channel Pairing And Fader And Mute Grouping

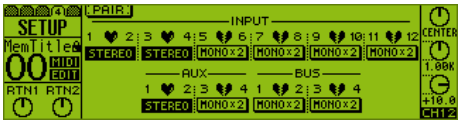
The 01V's 15 quick-response 60mm motorized faders serve multiple functions. Besides their role as conventional mixer faders to adjust channel output signal levels, they also function as auxiliary send level controls for each of the 4 aux sends, as well as onboard effects aux send level controls.

When a scene memory is recalled, the faders automatically position themselves to the levels stored. Likewise, when an aux or effects function is selected, they position themselves precisely at the send level settings.

The 01V's channel Group function lets you configure 3 separate fader groups and 3 separate mute groups which work independently so you can build up complicated mixes quickly. Moving one fader within a group will automatically adjust the other faders in the group by the same relative amount. Similarly, pressing one ON button in a mute group will automatically turn the other channels in the group on or off.

A stereo-pairing function is handy for linking adjacent odd/even number channels, with panning either independent or "ganged". When channels are paired, moving either channel fader will automatically adjust the other channel level by the same amount. The 4 aux sends and 4 bus outs can also be paired.





Fader grouping and channel stereo pairing functions let you control two or more channel levels by moving only a single fader in the group or pair.

Comprehensive MIDI Functions And User-definable Remote Control

A true product of the digital age, the 01V features MIDI IN, OUT and THRU terminals which permit control of all parameters in real-time using MIDI Control Change and System Exclusive messages, providing Dynamic Automation via MIDI.

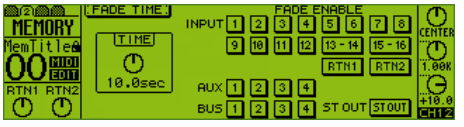
This means you can "record" all fader movements, channel on/off selections, scene selections, effect selections, as well as panning, EQ and other parameter adjustments to an external MIDI sequencer, then have the sequencer "play" them back in order to create an automated mixdown.

You can also perform MIDI bulk dump operations to a MIDI data filer (such as the Yamaha MDF3 MIDI Data Filer) or MIDI sequencer to save your scene data, as well as user EQ, dynamics and effects programs.

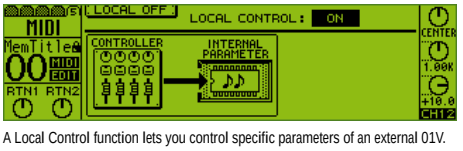
01V faders and user definable buttons in the menu can be used to control other MIDI devices such as digital audio recorders and processors via MMC (MIDI Machine Control) commands.

The 01V's MIDI remote function is extremely powerful. MIDI remote allows the 01V's motorized faders to remotely control the internal levels in a digital audio workstation, and then — at the press of a button — the faders can be used to edit the internal parameters of an external effects processor. You can define which MIDI command can be transmitted along with fader movement or channel on/off without affecting the performance of the internal processor.

A TO HOST (RS422) port permits direct connection to a personal computer without a MIDI interface. You can also use it to connect two 01Vs for double the mixing power. The 01V Link function allows two mixers to behave like one mixer, which gives you the freedom to build a 48 channel digital mixdown system.

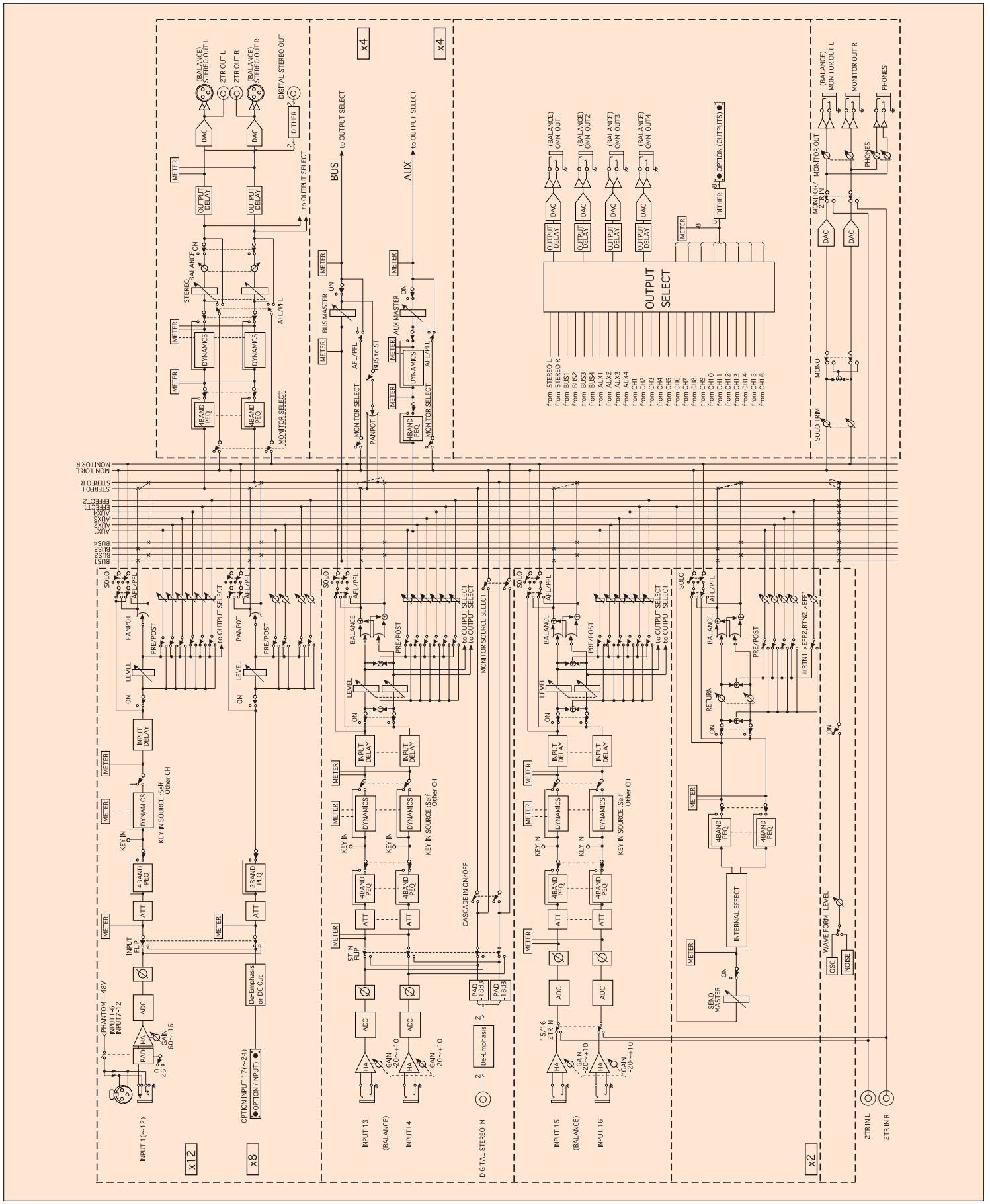


The 01V's Fade Time function can be used to specify a cross fade time between 0-25 seconds in 0.1 second steps at which fader levels move to their respective new positions. This can be used to create cross fades between scene recalls.



A Local Control function lets you control specific parameters of an external 01V.

01V Block Diagram



Specifications

General Specifications

Sampling frequency			Internal: 44.1 kHz External: 44.1 kHz (–10%) to 48 kHz (+6%)
Signal delay			Less than 2.5 ms @fs=44.1 kHz, CH INPUT to ST OUT
Fader			15 x 60 mm motorized
Fader resolution			0 to –72, –∞ dB (128 steps/60 mm) master faders except ST OUT +6 to –72, –∞ dB (128 steps/60 mm) other faders 0 to –96, –∞ dB (128 steps/60 mm) ST OUT fader
Total harmonic distortion **(Input Gain= Min.)**			Less than 0.1% 20 Hz to 20 kHz, @+14 dB into 600Ω Less than 0.02% 1 kHz, @+18 dB into 600Ω, CH IN to ST OUT
Frequency response			+1, –3 dB 20 Hz to 20 kHz, @+4 dB into 600Ω
Dynamic range **(maximum level to noise level)**			110 dB typ. DA converter (ST OUT) 105 dB typ. AD+DA (to ST OUT)
Hum & Noise (20 Hz to 20 kHz) Rs=150Ω, Input gain= Max., Input pad=0 dB, Input sensitivity= –60 dB Measured with a 6dB/oct filter @12.7 kHz; equivalent to a 20kHz filter with an infinite dB/oct attenuation			–128 dB Equivalent input noise –94 dB Residual output noise. ST OUT, ST OUT off –94 dB (98 dB S/N) ST OUT, ST fader at nominal level and all CH IN faders at minimum level. –64 dB (68 dB S/N) ST OUT, ST fader at nominal level and one CH IN fader at nominal level.
Maximum voltage gain			70 dB CH IN (CH 1-12) to ST OUT/OMNI(BUS) OUT 70 dB CH IN (CH 1-12) to OMNI(AUX) OUT (via pre input fader) 36 dB CH IN (CH 13-16) to ST OUT 76 dB CH IN (CH 1-12) to MONITOR OUT (via ST bus)
Crosstalk (@1 kHz)			–70 dB adjacent input channels (CH 1-12) –60 dB adjacent input channels (CH 13-16) –70 dB input to output
Memory/Libraries		Scene	99
		EQ	80 (40 preset, 40 user)
		Effects	99 (42 preset, 57 user)
		Dynamics	80 (40 preset, 40 user)
Controls	**Analog section**	INPUT (1-12)	PAD (0/26), GAIN (–16 to –60) PHANTOM +48 V switch (simultaneously suplied to CH 1-6, 7-12)
		INPUT (13/14)	GAIN (+10 to –20)
		INPUT (15/16)	GAIN (+10 to –20), INPUT SELECT (15/16, 2TR IN)
		OUTPUT	MONITOR SELECT (2TR IN, MONITOR) MONITOR LEVEL CONTROL PHONES LEVEL CONTROL
	Digital section	ON & SEL Keys	CH 1-12, CH 13/14, CH 15/16 STEREO/MASTER (AUX 1-4, EFFECT 1, 2), RETURN 1, 2
		FADERS	CH 1-12, CH 13/14, CH 15/16 STEREO/MASTER (AUX 1-4, EFFECT 1, 2)
		ENCODERS	RETURN 1, 2
		SOLO Keys	CH 1-12, CH 13/14, CH 15/16, RETURN 1, 2
		FADER MODE Keys	HOME, EFFECT 1, EFFECT 2, OPTION I/O, REMOTE, AUX 1, AUX2, AUX 3, AUX 4
		SELECTED CHANNEL EQ Keys ENCODERS	 HIGH, HI-MID, LO-MID, LOW PAN, F (EQ), G (EQ)
		INPUT CONTROL Keys	EQ/ATT, Ø/DELAY, DYNAMICS, PAN/ROUTING, VIEW
		SET UP Keys	UTILITY, MIDI, SETUP, MEMORY
		DATA ENTRY ENCODER KEYS	 PARAMETER (24 detents/rotation) +1/INC, –1/DEC, ENTER (push to fix parameter)
		CURSOR Keys	LEFT, RIGHT, UP, DOWN
	Display	LCD	320 x 80 dots Graphic LCD w/backlight and a contrast control pot.
		LEDs	ST OUT meter, 12 elements x 2 SOLO mode LED
Power Requirements			U.S.A. & Canada 120 V AC, 60 Hz European 230 V AC, 50 Hz
Power Consumption			70 W
Dimensions (W x H x D)			430 x 148 x 520 mm (16.9" x 5.8" x 20.4")
Weight			12.5 kg (27.5 lbs)
Security cover			Four M3 fixing holes for user-made cover

Analog Inputs Specifications

Input Terminals	PAD	GAIN	Actual Load Impedance	For Use With Nominal	Input level: Sensitivity	Input level: Nominal	Input level: Max. Before Clip	Connector in Console
CH INPUT CH 1-12	**0**	**–60**	3 kΩ	50–600Ω Mics & 600Ω Lines	–66 dB (388 µV)	–60 dB (775 µV)	–46 dB (3.88 mV)	XLR-3-31 type (Balanced)*1 & Phone jack (TRS) (Balanced)*2
	0	**–16**			–22 dB (61.6 mV)	–16 dB (123 mV)	–2 dB (616 mV)	
	26				+4 dB (1.23 V)	+10 dB (2.45 V)	+24 dB (12.3 V)	
CH INPUT CH 13-16		**–20**	10 kΩ	600Ω Lines	–26 dB (38.8 mV)	–20 dB (77.5 mV)	–6 dB (388 mV)	Phone jack (TRS) (Balanced)*2
		+10			+4 dB (1.23 V)	+10 dB (2.45 V)	+24 dB (12.3 V)	
2TR IN (L, R)			10 kΩ	600Ω Lines	–10 dBV (316 mV)	–10 dBV (316 mV)	+4 dBV (1.58 V)	RCA Pin jack (Unbalanced)

Analog Outputs Specifications

Output Terminals	Actual Source Impedance	For Use With Nominal	Output Level: Nominal	Output Level: Max. Before Clip	Connector in Console
STEREO OUT [L, R]	150Ω	600Ω Lines	+4 dB (1.23 V)	+18 dB (6.16 V)	XLR-3-32 type (Balanced)*1
OMNI OUT [1–4]	150Ω	10 kΩ Lines	+4 dB (1.23 V)	+18 dB (6.16 V)	Phone jack (TRS balanced)*2
2TR OUT [L, R]	600Ω	10 kΩ Lines	–10 dBV (316 mV)	+4 dBV (1.58 V)	RCA Pin jack (Unbalanced)
MONITOR OUT [L, R]	150Ω	10 kΩ Lines	+4 dB (1.23 V)	+18 dB (6.16 V)	Phone jack (TRS balanced)*2
PHONES	100Ω	8Ω phones	4 mW	25 mW	ST phone jack (TRS) (Unbalanced)*4
		40Ω phones	12 mW	75 mW	

*1: STEREO OUT XLR-type connectors are balanced (pin 1 = GND, pin 2 = HOT, pin 3 = COLD).
*2: BUS, AUX, and MONITOR OUT TRS phone jacks are balanced (tip = HOT, ring = COLD, sleeve = GND).
*3: Input channel insert connections are unbalanced (tip = SEND, ring = RETURN, sleeve = GND).
*4: The PHONES stereo phone jack is unbalanced (tip = LEFT, ring = RIGHT, sleeve = GND).
*5: When dB represents a specific voltage, 0 dB is referenced to 0.775 V rms.
*6: For REC OUT levels, 0 dBV is referenced to 1.00 V rms.

Digital I/O Specifications

Terminals	Format	Level	Connector
DIGITAL STEREO IN (COAXIAL)	IEC-60958 24-bit	0.5 Vpp (75Ω)	RCA Pin jack
DIGITAL STEREO OUT (COAXIAL)	IEC-60958 24-bit	0.5 Vpp (75Ω)	RCA Pin jack
TO HOST	—	RS-422	mini DIN Connector 8P
MIDI IN	MIDI	—	DIN Connector 5P
MIDI THRU	MIDI	—	DIN Connector 5P
MIDI OUT	MIDI	—	DIN Connector 5P

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*Specifications and appearance subject to change without notice.

Yamaha PA Web Site
http://www.yamaha.co.jp/product/proaudio/homeenglish/

For details please contact:

YAMAHA
YAMAHA CORPORATION
P.O.Box 1, Hamamatsu, Japan

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